

Sub C.17

wherein a concentration of said crystallization promoting material in a source region and a drain region formed in said active layer is higher than a concentration of said crystallization promoting material in other regions in said active layer by two or more orders of magnitude.

B1
cont'd.

2. (Amended) The semiconductor device according to claim 1, wherein said heat-resistant material is one of tantalum and a material mainly comprising tantalum.

3. (Amended) The semiconductor device according to claim 1, wherein said crystallization promoting material is nickel.

5. (Amended) The semiconductor device according to claim 1, wherein said semiconductor device is one selected from the group consisting of a portable intelligent terminal, a head mounted display, a front-projection type liquid crystal display, a cellular mobile telephone, a portable video camera, and a rear-projection liquid crystal display.

6. (Amended) The semiconductor device according to claim 1, wherein said crystallization promoting material is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

7. (Amended) The semiconductor device according to claim 1, wherein said gate electrode has a heat-resistance to a heat treatment of 700°C.

Please add new claims 35-61 as follows:

--35. A semiconductor device comprising:

an active layer comprising a semiconductor film comprising silicon, said active layer containing a crystallization promoting material for promoting crystallization of said semiconductor film;

B2

a gate electrode comprising a heat-resistant material adjacent to said active layer with a gate insulating film interposed therebetween;

a first interlayer insulating film over said active layer and said gate electrode; and

a second interlayer insulating film comprising a resinous material over said first interlayer insulating film,

wherein a concentration of said crystallization promoting material in a source region and a drain region formed in said active layer is higher than a concentration of said crystallization promoting material in other regions in said active layer by two or more orders of magnitude.

B2 36. The semiconductor device according to claim 35, wherein said heat-resistant material is one of tantalum and a material mainly comprising tantalum.

C 37. The semiconductor device according to claim 35, wherein said crystallization promoting material is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

38. The semiconductor device according to claim 35, wherein said gate electrode has a heat-resistance to a heat treatment of 700°C.

39. The semiconductor device according to claim 35, wherein said semiconductor device is one selected from the group consisting of a portable intelligent terminal, a head mounted display, a front-projection type liquid crystal display, a cellular mobile telephone, a portable video camera, and a rear-projection liquid crystal display.

40. The semiconductor device according to claim 35, wherein said first interlayer insulating film comprises silicon nitride.

41. The semiconductor device according to claim 35, wherein said second interlayer insulating film comprises a material selected from the group consisting of acrylics, polyimide, polyamide, polyimideamide, and epoxies.

42. A semiconductor device comprising:
an active layer comprising a semiconductor film comprising silicon, said active layer containing a crystallization promoting material for promoting crystallization of said semiconductor film; and

a gate electrode comprising a heat-resistant material adjacent to said active layer with a gate insulating film interposed therebetween;

wherein a concentration of said crystallization promoting material in a source region and a drain region formed in said active layer is higher than a concentration of said crystallization promoting material in other regions in said active layer which is less than 5×10^{16} atoms/cm³.

43. The semiconductor device according to claim 42, wherein said heat-resistant material is one of tantalum and a material mainly comprising tantalum.

44. The semiconductor device according to claim 42, wherein said crystallization promoting material is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

45. The semiconductor device according to claim 42, wherein said gate electrode has a heat-resistance to a heat treatment of 700°C.

46. The semiconductor device according to claim 42, wherein said semiconductor device is one selected from the group consisting of a portable intelligent terminal, a head mounted display, a front-projection type liquid crystal display, a cellular mobile telephone, a portable video camera, and a rear-projection liquid crystal display.

47. A semiconductor device comprising:

an active layer comprising a semiconductor film comprising silicon, said active layer containing a crystallization promoting material for promoting crystallization of said semiconductor film;

a gate electrode comprising a heat-resistant material adjacent to said active layer with a gate insulating film interposed therebetween;

a first interlayer insulating film over said active layer and said gate electrode; and

a second interlayer insulating film comprising a resinous material over said first interlayer insulating film,

wherein a concentration of said crystallization promoting material in a source region and a drain region formed in said active layer is higher than a concentration of said crystallization promoting material in other regions in said active layer which is less than 5×10^{16} atoms/cm³.

B2 48. The semiconductor device according to claim 47, wherein said heat-resistant material is one of tantalum and a material mainly comprising tantalum.

49. The semiconductor device according to claim 47, wherein said crystallization promoting material is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

50. The semiconductor device according to claim 47, wherein said gate electrode has a heat-resistance to a heat treatment of 700°C.

51. The semiconductor device according to claim 47, wherein said semiconductor device is one selected from the group consisting of a portable intelligent terminal, a head mounted display, a front-projection type liquid crystal display, a cellular mobile telephone, a portable video camera, and a rear-projection liquid crystal display.

52. The semiconductor device according to claim 47, wherein said first interlayer insulating film comprises silicon nitride.

53. The semiconductor device according to claim 47, wherein said second interlayer insulating film comprises a material selected from the group consisting of acrylics, polyimide, polyamide, polyimideamide, and epoxies.

54. A semiconductor device comprising:
an active layer comprising a semiconductor film comprising silicon, said active layer containing a crystallization promoting material for promoting crystallization of said semiconductor film; and

a gate electrode comprising tantalum adjacent to said active layer with a gate insulating film interposed therebetween;

wherein a concentration of said crystallization promoting material in a source region and a drain region formed in said active layer is higher than a concentration of said crystallization promoting material in other regions in said active layer by two or more orders of magnitude.

55. The semiconductor device according to claim 54, wherein said crystallization promoting material is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

56. The semiconductor device according to claim 54, wherein said gate electrode has a heat-resistance to a heat treatment of 700°C.

57. The semiconductor device according to claim 54, wherein said semiconductor device is one selected from the group consisting of a portable intelligent terminal, a head mounted display, a front-projection type liquid crystal display, a cellular mobile telephone, a portable video camera, and a rear-projection liquid crystal display.

58. A semiconductor device comprising:

an active layer comprising a semiconductor film comprising silicon, said active layer containing a crystallization promoting material for promoting crystallization of said semiconductor film; and

a gate electrode comprising tantalum adjacent to said active layer with a gate insulating film interposed therebetween;

wherein a concentration of said crystallization promoting material in a source region and a drain region formed in said active layer is higher than a concentration of said crystallization promoting material in other regions in said active layer which is less than 5×10^{16} atoms/cm³.

59. The semiconductor device according to claim 58, wherein said crystallization promoting material is selected from the group consisting of Fe, Co, Ni, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

60. The semiconductor device according to claim 58, wherein said gate electrode has a heat-resistance to a heat treatment of 700°C.

61. The semiconductor device according to claim 58, wherein said semiconductor device is one selected from the group consisting of a portable intelligent terminal, a head mounted display, a front-projection type liquid crystal display, a cellular mobile telephone, a portable video camera, and a rear-projection liquid crystal display.--
